Memorandum

To: *Stephanie Vaughn (USEPA)*
Elizabeth Buckrucker (USACE)

From: *Sharon Budney (CDM Smith)*
George Molnar (CDM Smith)

Date: *September 24, 2012*

Re: *Status Report (August 2012)*
CPG Oversight of Chemical Water Column Monitoring
Lower Passaic River Restoration Project

On behalf of the United States Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (USACE), Kansas City District, CDM Federal Programs Corporation (CDM Smith) is providing oversight of the Cooperating Parties Group (CPG) remedial investigation/feasibility study (RI/FS) field activities associated with chemical water column monitoring (CWCM), and the collection of chemical data in the Lower Passaic River (LPR).

CDM Smith oversight activities were conducted August 28, 29, and 30, 2012. Oversight included observations of the collection of samples in the LPR and tributaries in support of the Low Flow CWCM study. In addition, CDM Smith also collected split samples at select locations. All activities were conducted in accordance with the CPG *Quality Assurance Project Plan/Field Sampling Plan Addendum (QAPP/FSP), Remedial Investigation Water Column Monitoring/Small Volume Chemical Data Collection*, Revision 2, August 2011.

Photographs of field activities are in Attachment 1. Copies of the logbook notes are in Attachment 2. Copies of the chain of custody records are in Attachment 3.

General Summary
Oversight consisted of observations of in-river and field facility activities conducted by CPG contractors AECOM. Ocean Surveys Incorporated (OSI) provided vessel and sampling support.

All sample locations were verified by oversight staff using the map provided in CPG's QAPP/FSP. Review of the United States Geological Survey (USGS) gauging station at Dundee Dam indicated that maximum flows approached 545 cubic feet per second (cfs) due to a brief, but heavy rainfall that occurred in early morning on the first day of sampling, August 28. Flow rates below 400 cfs area required as per the QAPP in order for this to be considered a low-flow event. However, sampling activities proceeded after consultation with the EPA since the tributaries were not likely to be impacted by the slightly higher flow rate which was past peak and falling rapidly. In addition, the sampling schedule slightly changed due to the increased flow rate. Initially, sampling on Wednesday was scheduled to occur at RM 6.7, 10.2,

and Tidal 1. Due to the increased flow rate, sampling was moved further downstream to RM 0, 1.4, and above Dundee Dam on Wednesday to allow flows to decrease. The remaining locations RM 10.2, Tidal 1, and Tidal 2 were sampled on Thursday. Ultimately, there were no negative impacts to the project objectives from the temporary increase in flows (Nonconformance Report NC-120828-1).

Per AECOMs QAPP, if river flow velocities are greater than (>) 250 cfs at Dundee Dam, samples would be collected at river mile (RM) 10.2 instead of 13.5. In addition, if flow at the dam is less than (<) 1,000 cfs, samples would be collected at locations identified as Tidal 1 and Tidal 2 based on the location of the salt wedge instead of RMs 4.2 and 6.7 if flows were > 1000 cfs.

In summary, the following locations were sampled during this event:

- Dundee Dam
- RM 0
- RM 1.4
- RM 10.2
- Saddle River
- Second River
- Third River
- Tidal 1 which consisted of RMs 4.5, 6.75 (sampled twice), and 9.0
- Tidal 2 which consisted of RMs 2.95, 3.58 (sampled twice), and 4.2

Upon arrival at each RM location, CPG lowered a YSI water quality instrument to the bottom of the riverbed and then raised it while simultaneously collecting water quality data in real time. Attached to the instrument was sampling tubing attached to a remote pump located on the sampling vessel. After a full "cast", the instrument was lowered to approximately 3 feet above river bottom, and the pump was activated allowing the tubing to purge for a few minutes followed by sample collection. Once all samples were collected at the lower depth, the instrument was raised to approximately 3 feet below river surface, the tubing was allowed to purge and another sample set was collected. After the top sample was collected, a final "cast" was conducted to record real-time water quality measurements.

A similar approach was used above Dundee Dam and at the tributaries; however, samples were only collected from a single depth, approximately midway in the water column. The YSI and sampling tubing were deployed either off a bridge such as at Saddle River, or crews waded in such as at the Second and Third Rivers. Sampling above Dundee Dam was conducted from a boat.

For this sampling event, CDM Smith accepted split samples from the following locations:

- Third River (non-tidal)
- RM 10.2 (during low slack tide)
- RM 1.4 (during maximum flood tide)
- RM 0 (during low slack tide)

Throughout each day, samples were collected and shuttled back to the CPG facility for processing and packing. Oversight of activities at the CPG field facility conducted between August 28 through August 30 indicated a relatively organized system of sample logging, labeling, chain of custody generation, and packing given the large volume of samples and bottleware involved. All sampling packing activities were conducted in accordance with AECOM's QAPP.

Summary of Daily Activities

The following is a summary of daily activities observed during CDM Smith's oversight of CWCM activities:

Second River and Third River (August 28, 2012)

CDM Smith oversight staff observed the collection of surface water at Second and Third Rivers. Oversight staff collected split samples at the Third River location. Split samples and corresponding CPG samples are presented in Table 1. Copies of CDM Smith's signed chain of custodies can be found in Attachment 3.

RMs 0 and 1.4 (August 29, 2012)

CDM Smith oversight staff observed boat-based sample collection at RM's 0 and 1.4. Per AECOM's QAPP, samples were collected four times over the period of one tidal cycle beginning with low slack tide and ending with maximum ebb tide. Oversight crews observed one sampling event at each of the above mentioned RMs starting at RM 0 (low slack tide) followed by RM 1.4 (maximum flood tide). CDM Smith oversight staff collected split samples at RMs 0 and 1.4. Both CDM Smith's split samples and corresponding CPG samples are presented in Table 1. Copies of CDM Smith's signed chain of custodies can be found in Attachment 3.

RMs 10.2 and Tidal 2 (August 30, 2012)

CDM Smith oversight staff observed boat-based sample collection at RM 10.2 and Tidal 2 at RM 3.58. Per AECOM's QAPP, samples were collected four times over the period of one tidal cycle beginning with low slack tide and ending with maximum ebb tide. The oversight crew observed one sampling event at each of the above mentioned RMs starting at RM 10.2 (low slack tide) followed by Tidal 2 (maximum flood tide). CDM Smith oversight staff collected split samples from RM 10.2. Both CDM Smith's split samples and corresponding CPG samples are presented in Table 1. Copies of CDM Smith's signed chains of custodies can be found in Attachment 3.

QAPP Compliance

With the exception of sampling on Tuesday when flows at Dundee Dam were above 400 cfs, all field activities were conducted in accordance with QAPP procedures. AECOM in consultation with EPA proceeded with the program starting with the tributaries since flows were past peak during tributary sample collection and falling rapidly. Flows decreased to below 400 cfs later that evening.

Table 1
Cooperating Parties Group and CDM-Smith Split Sample Identification
August 2012 Low Flow Chemical Water Column Monitoring Oversight
Lower Passaic River Restoration Project
Lower Passaic River, New Jersey

Location	CPG Sample ID	CDM Split Sample ID	QC Samples	Tide Event	Collection Date	Analysis
Third River	12G-CE05-T3R1-AS	12G-CE05-T3R1-AS-C	MS/MSD **	NA	8/28/2012	PAH/Alkyl PAHs, pesticides, PCB congeners, PCDD/PCDF, metals plus Ti (total and dissolved), mercury (total and dissolved), methyl mercury (total and dissolved), hexavalent chromium (dissolved), TOC, DOC, POC, SSC, TDS
RM 0	12G-CE01-T000-AS	12G-CE01-T000-AS-C		low slack	8/29/2012	
RM 0	12G-CE01-T000-BS	12G-CE01-T000-BS-C		low slack	8/29/2012	
RM 1.4	12G-CE02-T014-BS	12D-CE02-T014-BS-C		maximum flood	8/29/2012	
RM 10.2	12G-CE01-T102-BS	12G-CE01-T102-BS-C		low slack	8/30/2012	
RM 10.2	12G-CE01-T102-BS	12G-CE01-T102-BS-CX	Duplicate *	low slack	8/30/2012	

CPG - Cooperating Parties Group
DOC - dissolved organic carbon
ID - identification
MS/MSD - matrix spike/matrix spike duplicate
NA - not applicable; tributaries were not sampled over the course of a full tidal cycle
PAH - polycyclic aromatic hydrocarbon
PCB - polychlorinated biphenyl
PCDD/PCDF - polychlorinated dibenzodioxins/polychlorinated dibenzofurans
POC - particulate organic carbon
QC - quality control
SSC- suspended solids concentration
TDS - total dissolved solids
Ti - titanium
TOC - total organic carbon
* - field duplicate sample of CDM split sample 12G-CE01-T102-BS-C
** - MS/MSD only for PAH/Alkyl PAHs, total and dissolved mercury and methyl mercury, dissolved hexavalent chromium, TOC, POC and DOC

Attachment 1
Photographs of Field Activities

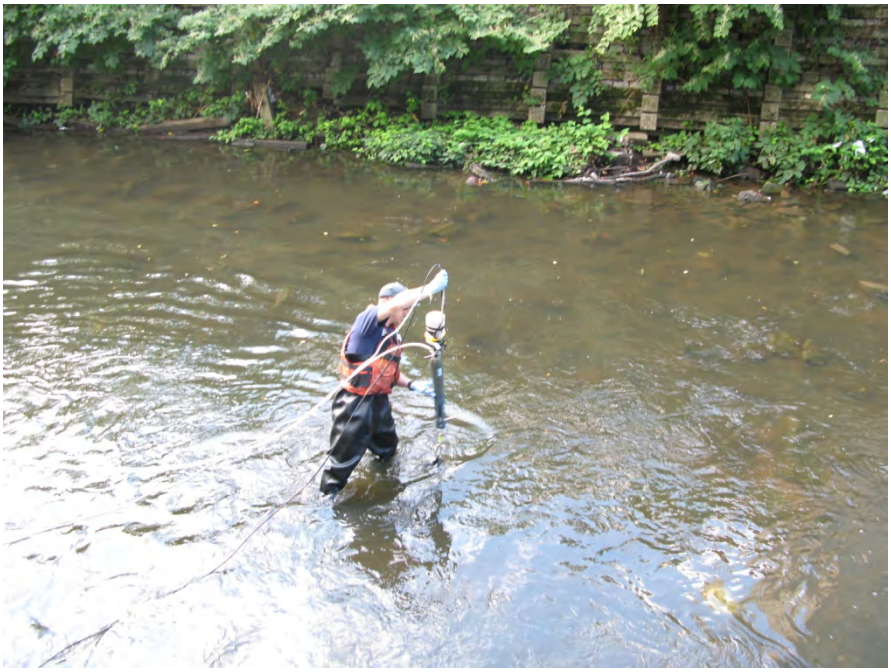

Photo 1 - Deploying water quality meter at Second River

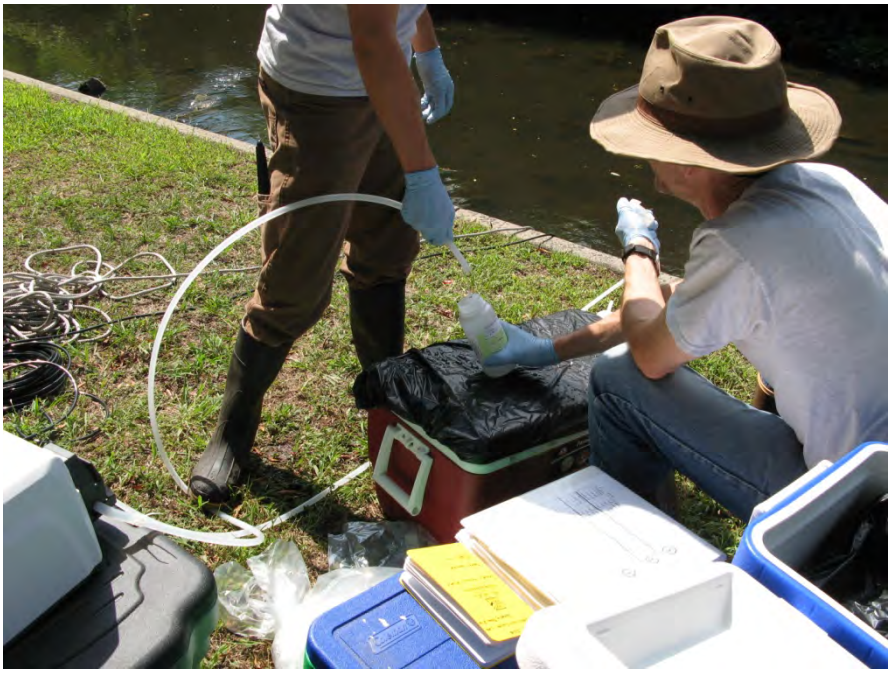

Photo 2 - Sample collection at Second River

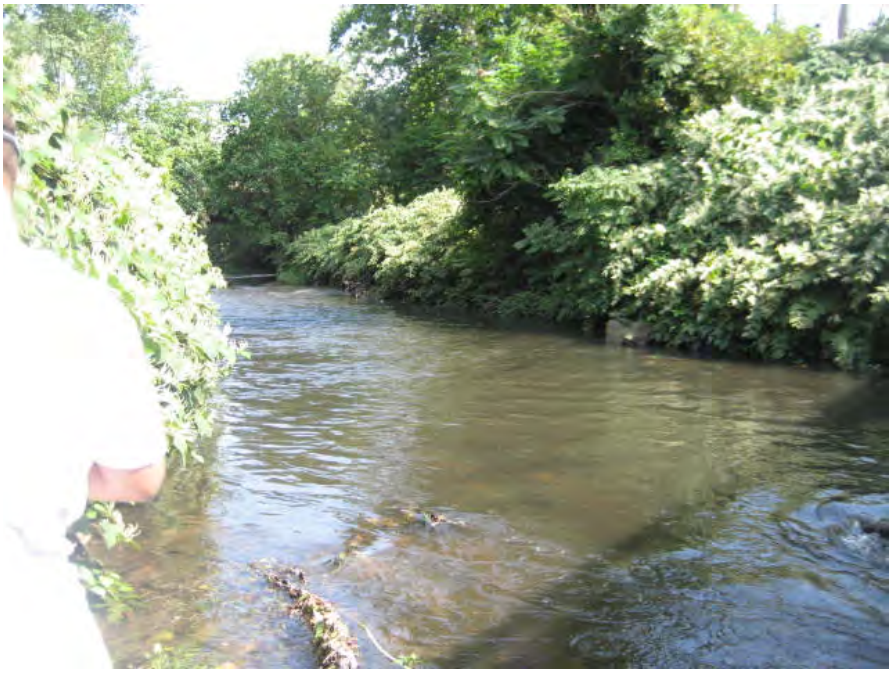

Photo 3 - Sample location Third River

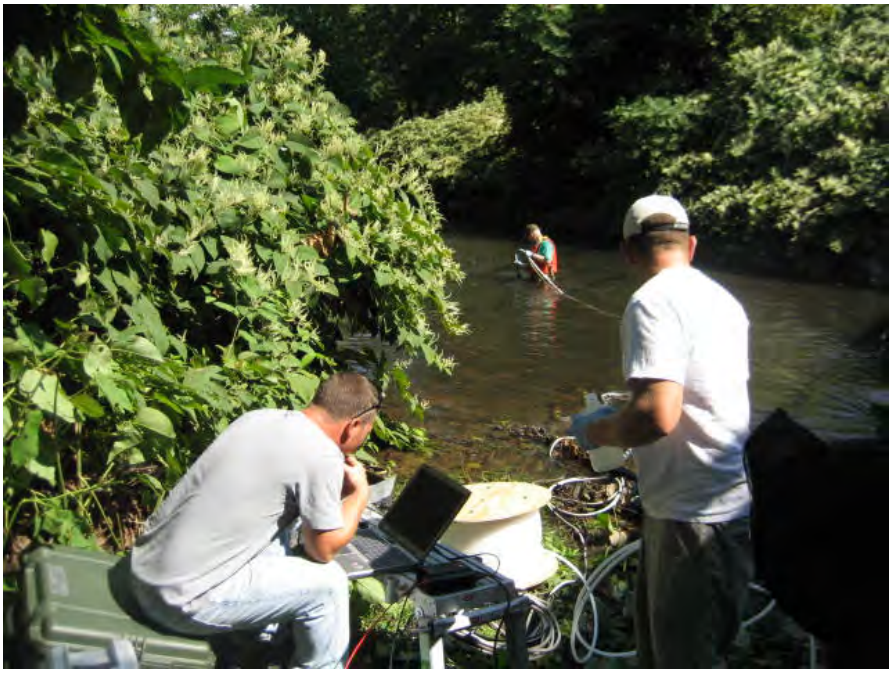

Photo 4 - Setting up sampling equipment at Third River

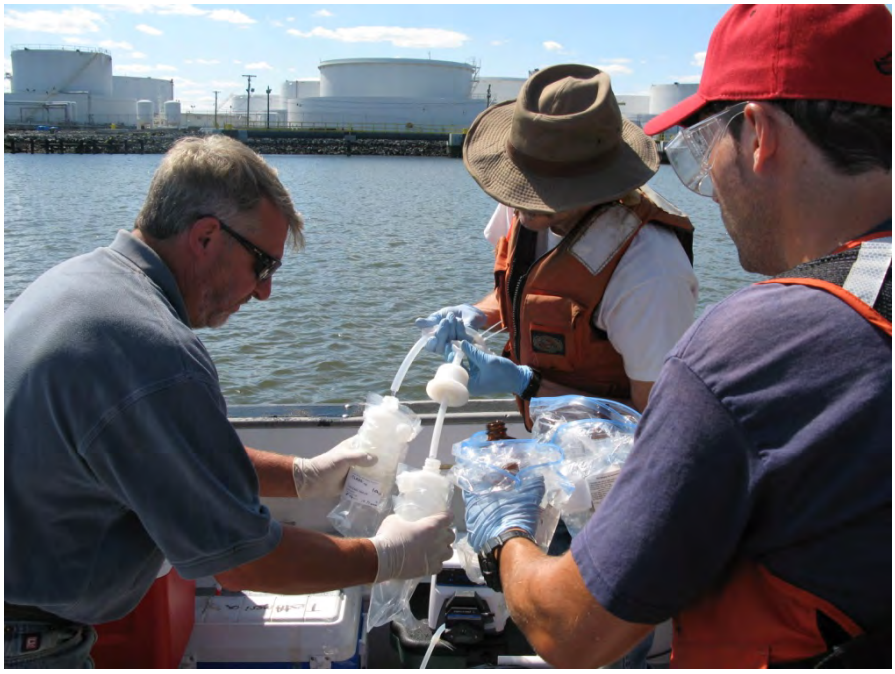

Photo 5 - CDM Smith split sample collection at RM 0 using clean hands/dirty hands method

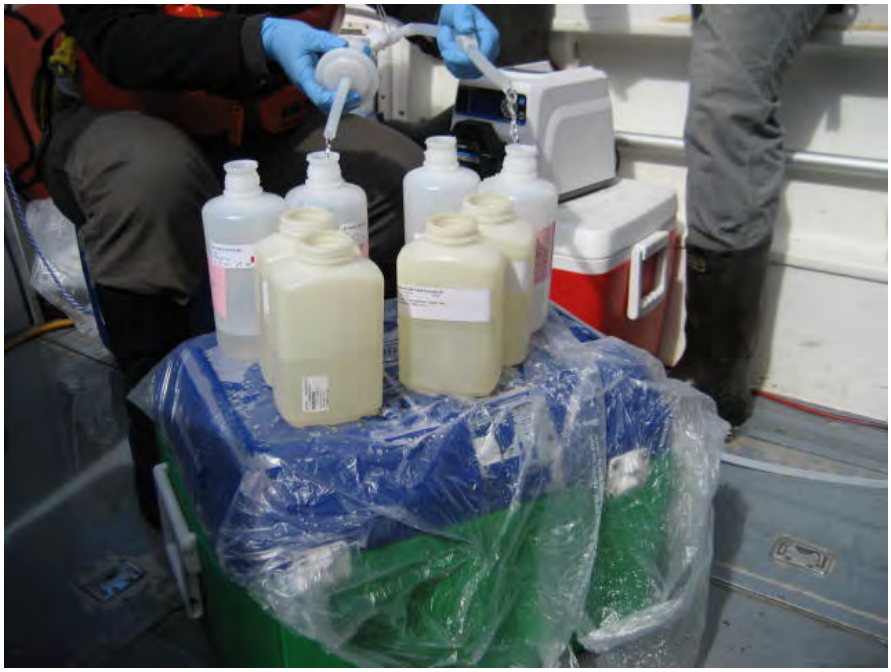

Photo 6 - Sample collection at RM 1.4

Photo 7 - Sample collection at RM 10.2

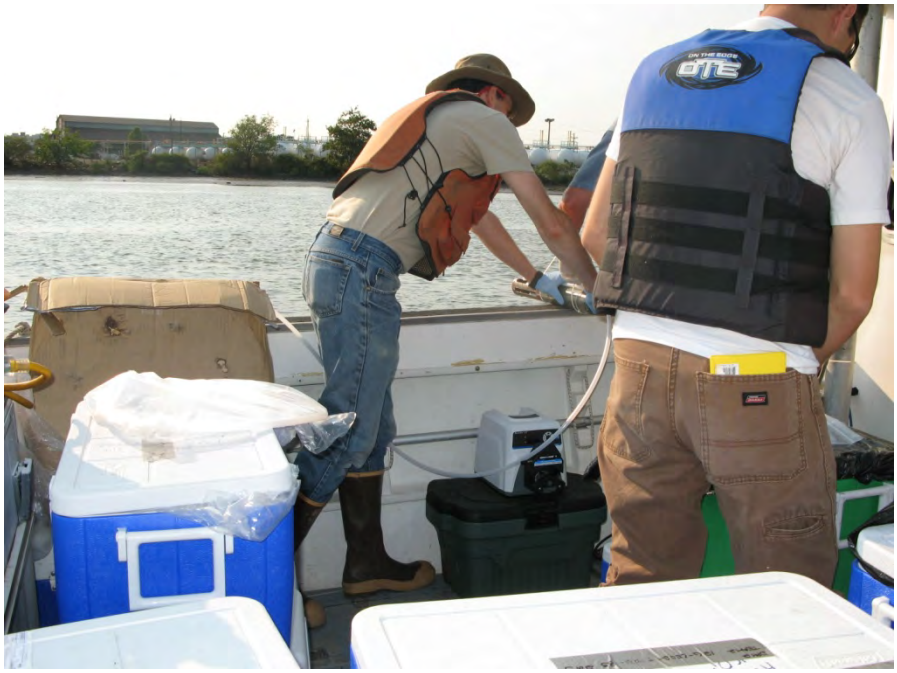

Photo 8 - Lowering water quality meter to conduct water column profile at Tidal 2 (RM 3.58)

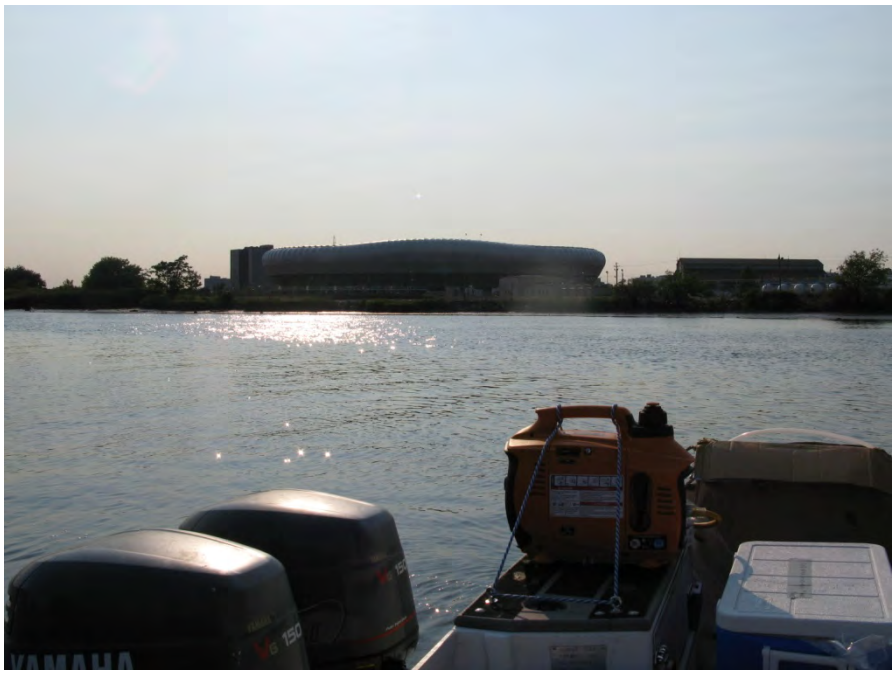

Photo 9 - Sample location Tidal 2 (RM 3.58)

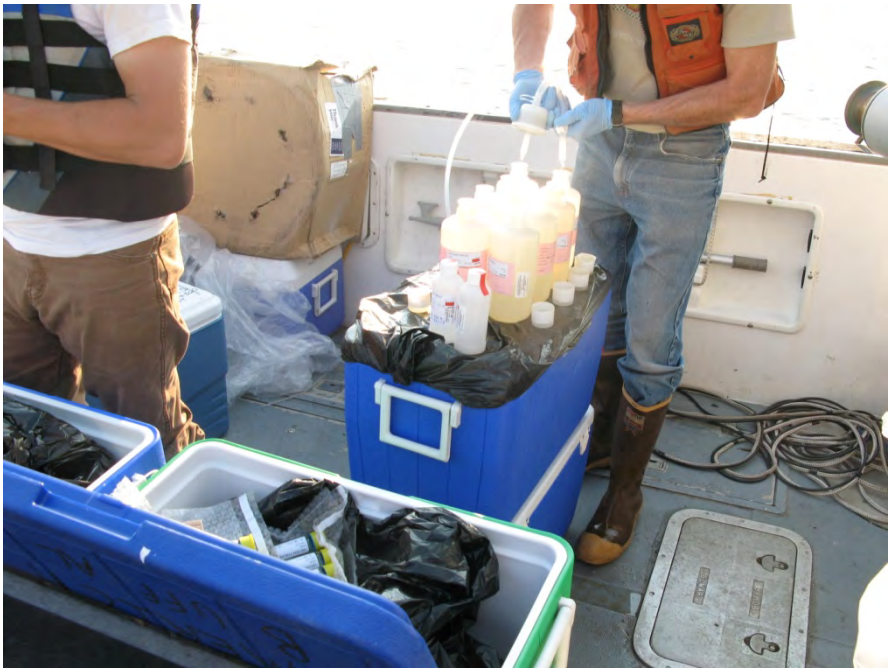

Photo 10 - Sample collection at Tidal 2 (RM 3.58)

Photo 11 - Sample processing at CPG Facility

Photo 12 - Sample packaging at CPG facility

Attachment 2

Copies of Oversight Field Logbook Notes

Location Passaic River Date 8-28-12

Project / Client EPA

J. Rakowski

PPE: Modified Level

Weather: 70° Farenheight

Personnel: JR, SO (CDM-Smith)

Objective: Collection of split sample at third river, oversight of sampling at second river.

0730 JR arrives onsite.

0745 JR and SO complete labeling today's bottleware.

0755 Ryan Mcarthey (AECOM) briefs CDM-Smith on today's schedule. The cubic feet per second is at 407 currently which is above the low flow 400 marker. They will proceed with this event despite the river level.

0810 JR calls GM to inform him of river levels.

0830 RM (AECOM) informs JR that OSI will arrive at 10am with pumps, 1030 JR arrives at second river. AECOM sample id will be 12G-CE05-T2R1-AS

* 1056 12G-CE05-T2R1-AS Sample time

1155 Sample stop time

1210 AECOM, OSI, and CDM-Smith depart site.

J. R. 8-28-12

Location Passaic River Date 8-28-12

Project / Client EPA

J. Rakowski

Location Lower Passaic River Date 8/28/12

Project / Client CWCM / USACE

07:50 → SO arrives on Site at CPG facility.
Weather → Cloudy ~80°F
PPE → Level D Modified
* Sean O'Hare (SO) & Josh Rakowski (JR) reviews battleware to make sure all is accounted for. Samples will be collected at the 3rd River 12G-CE05-T3R1-AS-E
08:20 → Ryan McCarthy (RC) informs CDM Smith that schedule will be delayed until QSI arrives to Kelp out.
10:47 → Arrive at Third River and begin setting up
10:53 → Ryan McCarthy (RM) wades out into middle of Third River and will place YSI approximately half cm

SO 8/28/12

Location Lower Passaic River Date 8/28/12

Project / Client CWCM - USACE

down into water column.
11:00 → Begin Purging at Third River.
11:07 → Collect sample at location 126-CEOS-T3R1-AS-C. CDM Smith collects split samples ~25 bottles.
Salinity → .21 PPT
Analyses include the following:
Mercury (Total)
Mercury (Dissolved)
Methyl Mercury (Total)
Methyl Mercury (Dissolved)
TAL Metals + Ti (Total)
TAL Metals + Ti (Dissolved)
Hexavalent Chromium
TOC
POC/DOC
PAH
Pesticides
PCBs
PCDD/PCDF
SSC/TPS
*Pump was ~ 1.5' - 1.7' below top of water surface.
12:10 → Complete collection of
12:25 depart site

SO 8/28/12

Location Lower Passaic River Date 8/28/12

Project / Client CWCM - USACE

Sample Summary
* CDM Smith collected split sample 126-CEOS-T3R1-AS-C (MS/MSD)

SO

8/28/12

Location Passaic River Date 8-29-12

Project / Client EPA

J. Rakowski

PPE: Modified Level D
Weather: 80° Farenheight
Personnel: JR, SO (CDM-Smith)
Objective: Split Sample collection and over sight

1200 JR and SO arrive at CPG dock, CDM Smith is awaiting Miller boat, in order to head to River mile 0.

1220 Sandy Miller picks up CDM-Smith at CPG facility

1300 Arrive at River Mile 0.

1310 OSI crew is currently collecting water profile.

1315 14.2' to River bottom at RM 0, Pump depth is at 11.1'

*1326 [12G-CE01-T000-BS-C]
Sample time
Line was purged before Sampling. JR 8-29-12

2.0 8-29-12

Location Passaic River Date 8-29-12

Project / Client EPA

J. Rakowski

1400 Sampling continues the current turbidity is 9ppm. The NTU has ranged from 8-9.

1420 Sampling is complete CDM-Smith switch from Sandy Miller to Erin Miller.

1425 Erin Miller ties up to OSI boat.

1430 AECOM starts purging out line

*1434 [12G-CE01-T000-AS-C]
Sample time
N => 683232.9'
E => 597428.69'

1520 samples collected - Erin Miller heads to RM 1.4

15:30 => Depart to RM 1.4

15:35 => Steve Bodet of OSI informs SO that Miller's vessel will not be able to tie off to OSI vessel. SO will jump on

J. Rakowski 8/29/12

Location Passaic River Date 8/29/12

Project / Client EPA

J. Rutgers:

board and collect split samples from 12G-CED1-T014-BS-C

16:15 → OSI conducts water profile column. Total water depth is 17.0'. YSI/pump is placed ~ 3' above river bottom at 14.0'.

16:22 → Begin purging

16:25 → Collect sample 12G-CED1-T014-BS-C

N → 691196

E → 597984

17:02 → Complete sample collection at 12G-CED1-T014-BS-C

Salinity → 19 PPT

Pump Depth → 14.25'

17:00 → Begin purging at top.

1720 Miller picks up CPM-Smith.

1800 CPM-Smith arrives at CPG facility and departs.

J.R 8/29/12

Location Lower Passaic River Date 8-30-12

Project / Client CWCM - USACE

J. Rabouin

PPE: Modified Level D

Weather: 80° farenheight

personnel: JR, SO (CDM-Smith)
AECOM/QSI, Miller's

objective: Split 12G-AE01-T02
BS-C and duplicate - oversee
tidal location

1330 JR and SO meet Miller's at CPG boat ramp,

1340 depart CPG ramp to head to RM 10.2.

14:05 → Arrive at station RM 10.2. SO hops onto QSI vessel while Kevin of QSI hops onto Miller's Launch to head back to CPG facility, so QSI can bring trailer to nearby boat ramp

Total Depth → 12.2'

QSI will raise pump to ~9.2' to start pumping. QSI conducted a profile of the water column prior to pumping out lines

SO 8/30/12

Location Lower Passaic River Date 8/30/12

Project / Client CWCM - USACE

14:20 → Begin purging out lines for three minutes prior to collecting sample 12G-CE01-T102-BS

N → 719741.74'

E → 592153.59'

15:30 → Miller's boat captain Joe McCarthy of Miller arrives back at location RM 10.2 and transfers samples onto Miller's vessel. CDM Smith proceeds back up river to CPG dock.

15:50 → Drop off samples to CPG dock. JR hops off Miller's vessel and will depart site en route to CDM Smith warehouse in Edison, New Jersey to finish processing samples.

15:55 → Head back down to Tidal 2 location to oversee second round of cycle of sampling

16:45 → Arrive at Tidal 2

SO - 8/30/12

Location Lower Passaic River Date 8/30/12

Project / Client CWCM - USACE

which is approximately at RM 3.58 and tie up to OSI vessel. SD will retrieve both the bottom and top intervals collected.

17:00 → OSI casts profile of water column. The total depth is 16.7'. Therefore the pump will be raised to ~ 13.7' to collect the sample 126-CE02-TTR2-BS

17:11 → Begin Purging lines for approximately 3 minutes prior to sample collection.

17:14 → Begin collecting sample 126-CE02-TTR2-BS

Tidal 2 Sample locations include: RM is 2.95, RM 3.58, RM 4.5, and RM 3.58

* This tidal 2 location coordinates are:

N → 693728

E → 590981

SO 8/30/12

Location Lower Passaic River Date 8/30/12

Project / Client CWCM - USACE

17:35 → AECOM completes collection of bottom sample

17:37 → OSI casts YSI/tubing to ~ 3' below water surface.

17:42 → Begin purging lines for 3 minutes prior to collecting sample.

17:45 → Collect sample 126-CE02-TTR2-AS(AT) which is a duplicate sample for AECOM TTR1 → RM 4.5, RM 6.75, RM 9.0, & RM 6.75

18:36 → Finish collection of sample 126-CE02-TTR2-AS(AT)

18:36 → Remove YSI out of water and detach tubing. Proceed to haul YSI and

18:39 → Drop YSI to river bottom and sit.

18:44 → Remove YSI upon completion of water column profile.

Location Lower Passaic River Date 8/30/12

Project / Client CWCM - USACE

16:45 → SO leaves Miller Launch, captain Joe McCarthy to proceed to Passaic Yacht Club.

19:10 → SO signs off on Paperwork and departs Passaic Yacht Club en route home.

Sample Summary:

CDM collected/split samples at RM 10.2:

12G-CE01-T102-BS-C

12G-CE01-T102-BS-C1 (Field Duplicate)

8/30/12

Attachment 3
Copies of Signed Chain of Custodies

USEPA Generic COC (REGION COPY)

DateShipped: 8/28/2012
CarrierName: FedEx
AirbillNo: 798820254475

CHAIN OF CUSTODY RECORD

Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-130903-0027

Lab: AXYS Analytical Services Ltd.
Lab Address: 2045 Mills Road W.
Lab Phone: 8883730881

Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Sample Type
12G-CE05-T3R1-AS-C	Surface Water/ JR	Grab	PCB_C(21), Extra(21), PAH/Al PAH(21), Pesticides(21), PCDD PCDF(21)	A (4 C), C (4 C), K (4 C), L (4 C), M (4 C) (8)	Tidal 3	08/28/2012 11:07	Lab QC

Sample(s) to be used for Lab QC: 12G-CE05-T3R1-AS-C

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: PCB_C=PCBs (CONGENERS), Extra=Extra bottle, PAH/Al PAH=PAH/Alkyl PAH, Pesticides=Pesticides, PCDD PCDF=PCDD PCDF

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA
DateShipped: 8/28/2012
CarrierName:
AirbillNo: Hand Deliver

CHAIN OF CUSTODY RECORD
Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-125359-0021
Lab: EPA-DESA laboratory
Lab Address: 2890 Woodbridge Ave
Lab Phone: 7323216707

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
	12G-CE05-T3R1-AS-C	Tidal 3		H	Total Organic Carbon	Surface Water	8/28/2012	11:07	2	250 mL poly	4 C	Y
	12G-CE05-T3R1-AS-C	Tidal 3		I	Particulate/Dissolved organic carbon	Surface Water	8/28/2012	11:07	2	250 mL poly	4 C	Y
	12G-CE05-T3R1-AS-C	Tidal 3		J	Suspended solids/Total dissolved solids	Surface Water	8/28/2012	11:07	1	1 L poly	4 C	N
	12G-CE05-T3R1-AS-C	Tidal 3		R	Dissolved Hexavalent Chromium	Surface Water	8/28/2012	11:07	2	250 mL poly	4 C	Y

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA
DateShipped: 8/28/2012
CarrierName:
AirbillNo: 798819789458

CHAIN OF CUSTODY RECORD
Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-133829-0030
Lab: Microbac Laboratories, Inc.
Lab Address: 250 W. 84th Drive
Lab Phone: 2197698378

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
	12G-CE05-T3R1-AS-C	Tidal 3		F	Mercury - Dissolved	Surface Water	8/28/2012	11:07	2	500 mL glass	4 C	Y
	12G-CE05-T3R1-AS-C	Tidal 3		G	Mercury - Hg	Surface Water	8/28/2012	11:07	2	500 mL glass	4 C	Y
	12G-CE05-T3R1-AS-C	Tidal 3		P	Methyl Mercury	Surface Water	8/28/2012	11:07	2	500 mL glass	4 C	Y
	12G-CE05-T3R1-AS-C	Tidal 3		Q	Methyl Mercury-Dissolved	Surface Water	8/28/2012	11:07	2	500 mL glass	4 C	Y

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA Generic COC (REGION COPY)

DateShipped: 8/28/2012

CarrierName: FedEx

AirbillNo: 798820046997

CHAIN OF CUSTODY RECORD

Passaic - F2L

Case Complete: False

Cooler #:

No: 2-082412-130427-0024

Lab: Shealy Environmental

Lab Address: 106 Vantage Point Drive

Lab Phone: 8037919700

Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Sample Type
12G-CE05-T3R1-AS-C	Surface Water/ JR	Grab	Metals plu(21), Dis Metplu(21)	N (4 C), O (4 C) (2)	Tidal 3	08/28/2012 11:07	Lab QC

Sample(s) to be used for Lab QC: 12G-CE05-T3R1-AS-C	**Shipment for Case Complete? N**
	Samples Transferred From Chain of Custody #
Analysis Key: Metals plu=Metals_Ti, Dis Metplu=Dissolved Metals TI	

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA Generic COC (REGION COPY)

DateShipped: 8/29/2012
CarrierName: FedEx
AirbillNo: 798820301647

CHAIN OF CUSTODY RECORD

Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-154004-0034

Lab: AXYS Analytical Services Ltd.
Lab Address: 2045 Mills Road W.
Lab Phone: 8883730881

Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Sample Type
12G-CE01-T000-BS-C	Surface Water/ JR	Grab	PCB_C(21), Extra(21), PAH/Al PAH(21), Pesticides(21), PCDD PCDF(21)	A (4 C), C (4 C), K (4 C), L (4 C), M (4 C) (5)	RM 0	08/29/2012 13:26	Field Sample
12G-CE02-T014-BS-C	Surface Water/ JR	Grab	PCB_C(21), Extra(21), PAH/Al PAH(21), Pesticides(21), PCDD PCDF(21)	A (4 C), C (4 C), K (4 C), L (4 C), M (4 C) (5)	RM 1.4	08/29/2012 16:25	Field Sample

Special Instructions:	**Shipment for Case Complete? N**
	Samples Transferred From Chain of Custody #

Analysis Key: PCB_C=PCBs (CONGENERS), Extra=Extra bottle, PAH/Al PAH=PAH/Alkyl PAH, Pesticides=Pesticides, PCDD PCDF=PCDD PCDF

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA Generic COC (REGION COPY)

DateShipped: 8/29/2012

CarrierName: FedEx

AirbillNo: 798820302091

CHAIN OF CUSTODY RECORD

Passaic - F2L

Case Complete: False

Cooler #:

No: 2-082412-131105-0028

Lab: AXYS Analytical Services Ltd.

Lab Address: 2045 Mills Road W.

Lab Phone: 8883730881

Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Sample Type
12G-CE01-T000-AS-C	Surface Water/ JR	Grab	PCB_C(21), Extra(21), PAH/Al PAH(21), Pesticides(21), PCDD PCDF(21)	A (4 C), C (4 C), K (4 C), L (4 C), M (4 C) (5)	RM 0	08/29/2012 14:34	Field Sample

Special Instructions:	**Shipment for Case Complete? N**
	Samples Transferred From Chain of Custody #

Analysis Key: PCB_C=PCBs (CONGENERS), Extra=Extra bottle, PAH/Al PAH=PAH/Alkyl PAH, Pesticides=Pesticides, PCDD PCDF=PCDD PCDF

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA
DateShipped: 8/29/2012
CarrierName:
AirbillNo: Hand Deliver

CHAIN OF CUSTODY RECORD
Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-125753-0022
Lab: EPA-DESA laboratory
Lab Address: 2890 Woodbridge Ave
Lab Phone: 7323216707

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
	12G-CE01-T000-AS-C	RM 0		H	Total Organic Carbon	Surface Water	8/29/2012	14:34	1	250 mL poly	4 C	N
	12G-CE01-T000-AS-C	RM 0		I	Particulate/Dissolved organic carbon	Surface Water	8/29/2012	14:34	1	250 mL poly	4 C	N
	12G-CE01-T000-AS-C	RM 0		J	Suspended solids/Total dissolved solids	Surface Water	8/29/2012	14:34	1	1 L poly	4 C	N
	12G-CE01-T000-AS-C	RM 0		R	Dissolved Hexavalent Chromium	Surface Water	8/29/2012	14:34	1	250 mL poly	4 C	N
	12G-CE01-T000-BS-C	RM 0		H	Total Organic Carbon	Surface Water	8/29/2012	13:26	1	250 mL poly	4 C	N
	12G-CE01-T000-BS-C	RM 0		I	Particulate/Dissolved organic carbon	Surface Water	8/29/2012	13:26	1	250 mL poly	4 C	N
	12G-CE01-T000-BS-C	RM 0		J	Suspended solids/Total dissolved solids	Surface Water	8/29/2012	13:26	1	1 L poly	4 C	N
	12G-CE01-T000-BS-C	RM 0		R	Dissolved Hexavalent Chromium	Surface Water	8/29/2012	13:26	1	250 mL poly	4 C	N
	12G-CE02-T014-BS-C	RM 1.4		H	Total Organic Carbon	Surface Water	8/29/2012	16:25	1	250 mL poly	4 C	N
	12G-CE02-T014-BS-C	RM 1.4		I	Particulate/Dissolved organic carbon	Surface Water	8/29/2012	16:25	1	250 mL poly	4 C	N

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA
DateShipped: 8/29/2012
CarrierName:
AirbillNo: Hand Deliver

CHAIN OF CUSTODY RECORD
Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-125753-0022
Lab: EPA-DESA laboratory
Lab Address: 2890 Woodbridge Ave
Lab Phone: 7323216707

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
	12G-CE02-T014-BS-C	RM 1.4		J	Suspended solids/Total dissolved solids	Surface Water	8/29/2012	16:25	1	1 L poly	4 C	N
	12G-CE02-T014-BS-C	RM 1.4		R	Dissolved Hexavalent Chromium	Surface Water	8/29/2012	16:25	1	250 mL poly	4 C	N

Special Instructions:

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA
DateShipped: 8/29/2012
CarrierName:
AirbillNo: 798847784331

CHAIN OF CUSTODY RECORD
Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-134019-0031
Lab: Microbac Laboratories, Inc.
Lab Address: 250 W. 84th Drive
Lab Phone: 2197698378

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
	12G-CE01-T000-AS-C	RM 0		F	Mercury - Dissolved	Surface Water	8/29/2012	14:34	1	500 mL glass	4 C	N
	12G-CE01-T000-AS-C	RM 0		G	Mercury - Hg	Surface Water	8/29/2012	14:34	1	500 mL glass	4 C	N
	12G-CE01-T000-AS-C	RM 0		P	Methyl Mercury	Surface Water	8/29/2012	14:34	1	500 mL glass	4 C	N
	12G-CE01-T000-AS-C	RM 0		Q	Methyl Mercury-Dissolved	Surface Water	8/29/2012	14:34	1	500 mL glass	4 C	N
	12G-CE01-T000-BS-C	RM 0		F	Mercury - Dissolved	Surface Water	8/29/2012	13:26	1	500 mL glass	4 C	N
	12G-CE01-T000-BS-C	RM 0		G	Mercury - Hg	Surface Water	8/29/2012	13:26	1	500 mL glass	4 C	N
	12G-CE01-T000-BS-C	RM 0		P	Methyl Mercury	Surface Water	8/29/2012	13:26	1	500 mL glass	4 C	N
	12G-CE01-T000-BS-C	RM 0		Q	Methyl Mercury-Dissolved	Surface Water	8/29/2012	13:26	1	500 mL glass	4 C	N
	12G-CE02-T014-BS-C	RM 1.4		F	Mercury - Dissolved	Surface Water	8/29/2012	16:25	1	500 mL glass	4 C	N
	12G-CE02-T014-BS-C	RM 1.4		G	Mercury - Hg	Surface Water	8/29/2012	16:25	1	500 mL glass	4 C	N

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA
DateShipped: 8/29/2012
CarrierName:
AirbillNo: 798847784331

CHAIN OF CUSTODY RECORD
Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-134019-0031
Lab: Microbac Laboratories, Inc.
Lab Address: 250 W. 84th Drive
Lab Phone: 2197698378

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
	12G-CE02-T014-BS-C	RM 1.4		P	Methyl Mercury	Surface Water	8/29/2012	16:25	1	500 mL glass	4 C	N
	12G-CE02-T014-BS-C	RM 1.4		Q	Methyl Mercury-Dissolved	Surface Water	8/29/2012	16:25	1	500 mL glass	4 C	N

Special Instructions:

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA Generic COC (REGION COPY)

DateShipped: 8/29/2012

CarrierName: FedEx

AirbillNo: 798820070844

CHAIN OF CUSTODY RECORD

Passaic - F2L

Case Complete: False

Cooler #:

No: 2-082412-130510-0025

Lab: Shealy Environmental

Lab Address: 106 Vantage Point Drive

Lab Phone: 8037919700

Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Sample Type
12G-CE01-T000-AS-C	Surface Water/ JR	Grab	Metals plu(21), Dis Metplu(21)	N (4 C), O (4 C) (2)	RM 0	08/29/2012 14:34	Field Sample
12G-CE01-T000-BS-C	Surface Water/ JR	Grab	Metals plu(21), Dis Metplu(21)	N (4 C), O (4 C) (2)	RM 0	08/29/2012 13:26	Field Sample
12G-CE02-T014-BS-C	Surface Water/ JR	Grab	Metals plu(21), Dis Metplu(21)	N (4 C), O (4 C) (2)	RM 1.4	08/29/2012 16:25	Field Sample

Special Instructions:	**Shipment for Case Complete? N**
	Samples Transferred From Chain of Custody #

Analysis Key: Metals plu=Metals_Ti, Dis Metplu=Dissolved Metals TI

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA Generic COC (REGION COPY)

DateShipped: 8/30/2012
CarrierName: FedEx
AirbillNo: 798820341927

CHAIN OF CUSTODY RECORD

Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-132333-0029

Lab: AXYS Analytical Services Ltd.
Lab Address: 2045 Mills Road W.
Lab Phone: 8883730881

Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Sample Type
12G-CE01-T102-BS-C	Surface Water/ JR	Grab	PCB_C(21), Extra(21), PAH/Al PAH(21), Pesticides(21), PCDD PCDF(21)	A (4 C), C (4 C), K (4 C), L (4 C), M (4 C) (5)	RM 10.2	08/30/2012 14:20	Field Sample
12G-CE01-T102-BS-CX	Surface Water/ JR	Grab	PCB_C(21), Extra(21), PAH/Al PAH(21), Pesticides(21), PCDD PCDF(21)	A (4 C), C (4 C), K (4 C), L (4 C), M (4 C) (5)	RM 10.2	08/30/2012 14:20	Field Duplicate

Special Instructions:	**Shipment for Case Complete? N**
	Samples Transferred From Chain of Custody #

Analysis Key: PCB_C=PCBs (CONGENERS), Extra=Extra bottle, PAH/Al PAH=PAH/Alkyl PAH, Pesticides=Pesticides, PCDD PCDF=PCDD PCDF

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA
DateShipped: 8/30/2012
CarrierName:
AirbillNo: Hand Deliver

CHAIN OF CUSTODY RECORD
Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-130127-0023
Lab: EPA-DESA laboratory
Lab Address: 2890 Woodbridge Ave
Lab Phone: 7323216707

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
	12G-CE01-T102-BS-C	RM 10.2		H	Total Organic Carbon	Surface Water	8/30/2012	14:20	1	250 mL poly	4 C	N
	12G-CE01-T102-BS-C	RM 10.2		I	Particulate/Dissolved organic carbon	Surface Water	8/30/2012	14:20	1	250 mL poly	4 C	N
	12G-CE01-T102-BS-C	RM 10.2		J	Suspended solids/Total dissolved solids	Surface Water	8/30/2012	14:20	1	1 L poly	4 C	N
	12G-CE01-T102-BS-C	RM 10.2		R	Dissolved Hexavalent Chromium	Surface Water	8/30/2012	14:20	1	250 mL poly	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2		H	Total Organic Carbon	Surface Water	8/30/2012	14:20	1	250 mL poly	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2		I	Particulate/Dissolved organic carbon	Surface Water	8/30/2012	14:20	1	250 mL poly	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2		J	Suspended solids/Total dissolved solids	Surface Water	8/30/2012	14:20	1	1 L poly	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2		R	Dissolved Hexavalent Chromium	Surface Water	8/30/2012	14:20	1	250 mL poly	4 C	N

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA
DateShipped: 8/30/2012
CarrierName:
AirbillNo: 798820018770

CHAIN OF CUSTODY RECORD
Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-134058-0032
Lab: Microbac Laboratories, Inc.
Lab Address: 250 W. 84th Drive
Lab Phone: 2197698378

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MSD
	12G-CE01-T102-BS-C	RM 10.2	Mercury - Dissolved	Surface Water	8/30/2012	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-C	RM 10.2	Mercury - Hg	Surface Water	8/30/2012	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-C	RM 10.2	Methyl Mercury	Surface Water	8/30/2012	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-C	RM 10.2	Methyl Mercury-Dissolved	Surface Water	8/30/2012	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2	Mercury - Dissolved	Surface Water	8/30/2012	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2	Mercury - Hg	Surface Water	8/30/2012	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2	Methyl Mercury	Surface Water	8/30/2012	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2	Methyl Mercury-Dissolved	Surface Water	8/30/2012	1	500 mL glass	4 C	N

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time

USEPA
DateShipped: 8/30/2012
CarrierName:
AirbillNo: 798820018770

CHAIN OF CUSTODY RECORD
Passaic - F2L
Case Complete: False
Cooler #:

No: 2-082412-134058-0032
Lab: Microbac Laboratories, Inc.
Lab Address: 250 W. 84th Drive
Lab Phone: 2197698378

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
	12G-CE01-T102-BS-C	RM 10.2		F	Mercury - Dissolved	Surface Water	8/30/2012	14:20	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-C	RM 10.2		G	Mercury - Hg	Surface Water	8/30/2012	14:20	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-C	RM 10.2		P	Methyl Mercury	Surface Water	8/30/2012	14:20	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-C	RM 10.2		Q	Methyl Mercury-Dissolved	Surface Water	8/30/2012	14:20	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2		F	Mercury - Dissolved	Surface Water	8/30/2012	14:20	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2		G	Mercury - Hg	Surface Water	8/30/2012	14:20	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2		P	Methyl Mercury	Surface Water	8/30/2012	14:20	1	500 mL glass	4 C	N
	12G-CE01-T102-BS-CX	RM 10.2		Q	Methyl Mercury-Dissolved	Surface Water	8/30/2012	14:20	1	500 mL glass	4 C	N

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time		Items/Reason	Relinquished By	Date	Received by	Date	Time